

What is claimed is:

1. A semiconductor device, comprising a semiconductor base body having a capacitor part, the capacitor part being provided with a substrate buried type capacitor structure in a three-dimensional cavity, the cavity being formed in a planar semiconductor substrate.

2. A semiconductor device as claimed in claim 1, wherein said capacitor part is provided with a capacitor structure through a cavity formed in said semiconductor substrate in such a manner that an aperture is opened on the surface side of said semiconductor substrate and that it extends either to the middle or through to the back side of the substrate.

3. A semiconductor device as claimed in claim 1 or 2, wherein said cavity is formed by etching.

4. A semiconductor device as claimed in any one of claims 1 to 3, wherein the front surface of said semiconductor substrate and the inner surface of the cavity thereof are constructed by an insulator formed by passivation.

5. A semiconductor device as claimed in any one of claims 1 to 4, wherein said capacitor part is constructed by a capacitor structure having a through substrate type cavity

penetrating from the surface side to the back side of said base body.

6. A semiconductor device as claimed in any one of claims 1 to 5, wherein said cavity has a structure as such having an approximately truncated-cone shape with its aperture opened on the front surface of said base body.

7. A semiconductor device as claimed in any one of claims 1 to 6, wherein a laminate structure comprising a first electrode layer, a dielectric layer, and a second electrode layer is formed in the inside of said cavity by means of a thin film deposition method.

8. A semiconductor device as claimed in claim 7, wherein said dielectric layer is constructed by trimming.

9. A semiconductor device as claimed in any one of claims 1 to 8, wherein it is constructed in such a manner that the back side surface of said semiconductor substrate which is provided with said cavity is removed, thereby exposing said electrode layer.

10. A semiconductor device as claimed in any one of claims 1 to 9, wherein it is constructed in such a manner that said

1005256-0430
2020-09-20

capacitor part is arranged so that it is connected to a power source, GND, or a signal line.

11. A semiconductor device as claimed in any one of claims 1 to 9, wherein it is constructed in such a manner that said capacitor part is arranged as such that it is connected to a clock line.

12. A semiconductor device as claimed in any one of claims 1 to 9, wherein it is constructed in such a manner that said capacitor part is arranged just under or in the periphery of an input/output pad connected to the substrate.

13. A semiconductor device as claimed in any one of claims 1 to 12, wherein it is constructed in such a manner that said semiconductor device has a laminate module structure comprising a plurality of said semiconductor base bodies stacked in layers, and that ball bodies are arranged interposed among said semiconductor base bodies.

14. A semiconductor device as claimed in claim 13, wherein said ball bodies have elasticity and that they form a cushion structure interposed among said semiconductor base bodies.

15. A semiconductor device as claimed in claim 13, wherein

said ball bodies have electric conductivity and that they form an electrically conductive structure interposed among the capacitors of said semiconductor base bodies.

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